
Dinner and Luncheon Addresses

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Charles Muscoplat, vice president for agricultural policy and dean of the College of Agricultural, Food and Environmental Sciences, University of Minnesota, stated that appropriate diet and lifestyle are twice as effective as pharmaceutical therapy in preventing adult-onset diabetes in certain high-risk populations. Diet and lifestyle also influence cardiovascular disease, cancer, and other major causes of mortality. Muscoplat provided a historical perspective of diet and health, coming up to date with a discussion of conjugated linoleic acids (CLAs): possibly the most potent cancer-fighting substances in the human diet. The milk from cows that graze on grass contains five-fold more CLAs than that from cows given alternative feeds. Plant and animal genomics will help improve our understanding of genes that encode antioxidants, vitamins, *etc.*, and how supplements and functional foods affect disease.

Concerns over genetically modified organisms were briefly summarized by **Anne Kapuscinski**, professor of fisheries and conservation biology, founding director of the Institute for Social, Economic and Ecological Sustainability, and extension specialist in biotechnology and aquaculture, University of Minnesota. She described the structure and efforts of the National Safety First Initiative, a diverse coalition that is addressing biosafety issues—to ensure that the promises of agricultural biotechnology will be realized—by drawing up cross-industry, publicly trusted standards for designing, producing, and monitoring biotech products. In the initial phase of operation, the Initiative will focus on crops that provide non-food products, encompassing pharmaceuticals to industrial materials, and food products from genetically modified fish and shellfish.

Twenty-first century biology will be increasingly multi-disciplinary and multi-dimensional, according to **Mary Clutter**, assistant director for biological sciences at the National Science Foundation. Whereas the biology of the twentieth century was mainly reductionist, new technologies and new disciplines will address questions from the atomic through the ecosystem to the planetary level. Clutter described six major challenges associated with twenty-first century biology. New partnerships will be needed to meet these challenges, including involvement of the public sector, state and local government as well as the national government, with significantly increased federal funding for research. She described interagency working groups at the federal level and international collaborative efforts that have already been productive in terms of elucidation of the genomes of *Arabidopsis* and *Oryza*.

George McGovern, ambassador to the Food and Agriculture Organization of the United Nations, Rome, Italy, described his contributions to the World Food Summit's resolution to halve the number of chronically hungry people in the world—from 800 million to 400 million—by 2015. He has proposed that the United Nations, with the United States in the lead, commit to providing a nutritious school meal to every child in the world. Not only is the hungry child lethargic when in class, many, particularly girls, never start school in the first place. In contrast, once the news is disseminated that a good meal is to be had just by showing up at school, parents ensure that girls are well as boys attend in increasing numbers: academic performance, athletic performance and health all improve dramatically. McGovern voiced approval of agricultural biotechnology as a means of increasing agricultural productivity—particularly in developing countries—thus helping to increase food production while preserving natural ecosystems.